ABSTRACT OF THE INVENTION

Disclosed are mechanisms for creating and communicating with computer processes. An application programming interface (API) presents services of the system to applications. The API is usable with all processes, local and remote, and is transparent with respect to the location of processes. A process table stores information about processes created using the system. The process table supports centralized process control and peer-to-peer process communication and synchronization. Each process is assigned a Universally Unique Identifier (UUID) that uniquely identifies the process no matter the computing device on which it runs. A parent UUID and a group UUID may be attached to the process and used for enforcing dependencies (e.g., for halting the process and all of its child processes) and for managing arbitrary, user-defined groups, respectively. A global event is associated with each process. When a process receives this event, it performs a controlled shutdown, cleans up, and reports status.